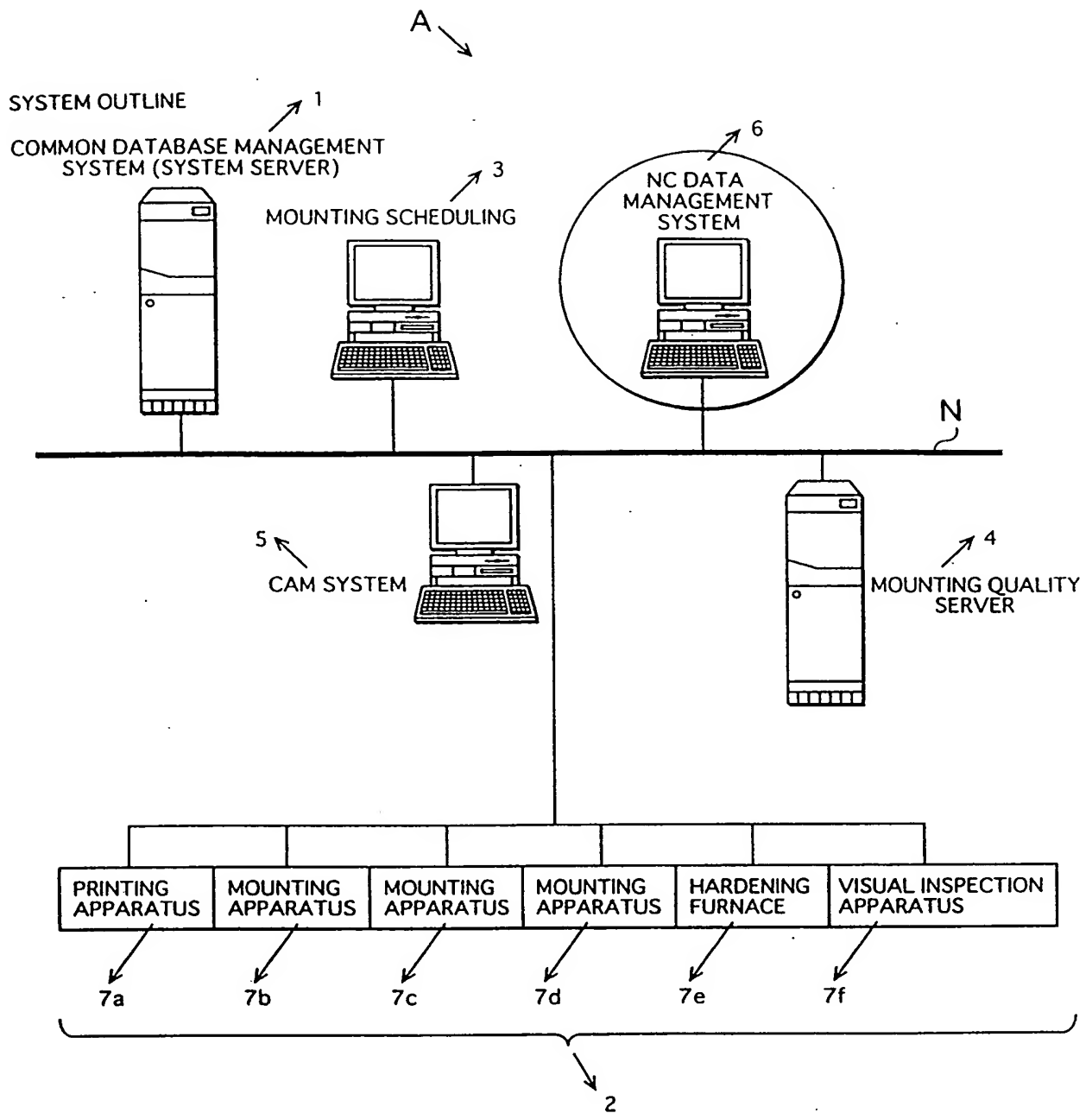


FIG.1



DATA STRUCTURE IN NC DATA MANAGEMENT SYSTEM

(A)

PRODUCTION PREPARATION TABLE (Seisanjunbi T)	100
PRODUCTION PLANNED START DATE/TIME	101
PRODUCTION PLANNED END DATE/TIME	102
BOARD NAME (RAW BOARD NAME)	103
LINE NAME	
LOT NO.	
SURFACE SECTION (FRONT:1, BACK:2)	
PLANNED NUMBER OF PRODUCTS	
NC PREPARATION STATUS FLAG (0:NG, 1:PART OK, 2:OK)	

(B)

NC MANAGEMENT TABLE	110
BOARD NAME (RAW BOARD NAME)	111
LINE NAME	112
EQUIPMENT NAME	113
NC MANAGEMENT ID	114

(C)

NC MANAGEMENT ID TABLE	120
NC MANAGEMENT ID	121
EQUIPMENT ID	122
DATA TYPE ID (*1)	123
PG-Ver-ID	124
INSPECTION STATUS (1:CAM, 2:NC MANAGE, 3:INSPECTED)	125
EFFECTIVE DATE	126
DOWNLOAD FLAG	127
SPEC CHANGE NO.	128
CHANGE CONTENTS	129
QUALITY FRACTION DEFECTIVE (ppm)	
TOTAL NUMBER OF PRODUCED PARTS	
NUMBER OF DEFECTIVE PARTS	
NC PREPARATION STATUS FLAG (0:NO, 1:OK)	

- #1 DATA TYPE ID
1:NC PRO
2:ARRANGEMENT PRO
3:PARTS LIB
4:SUPPLY LIB
5:BOARD PRO
6:RAW BOARD
7:PARTS TABLE

FIG.2

OPG-Ver-ID TABLE (PgVerd T)

PG-Ver-ID	131
PROGRAM ID	132
VERSION ID	133

OPROGRAM ID MASTER (PgID MST)

PROGRAM ID	141
PROGRAM NAME	142

OPARTS ARRANGEMENT TABLE (Parts T)

PROGRAM ID	151
EQUIPMENT NAME	152
Z NUMBER	153
PARTS NUMBER	154
PARTS SHAPE CODE	155

OPARTS SHAPE TABLE (Keizyou_T)

PROGRAM ID	161
EQUIPMENT NAME	162
PARTS NUMBER	163
PARTS SHAPE CODE	164
PARTS SHAPE CODE	165

OINSPECTED PARTS LIBRARY TABLE

LIB-ID	171
EQUIPMENT NAME	172
EQUIPMENT TYPE ID	173
PARTS SHAPE CODE	174
PARTS SHAPE VERSION ID	175
PARTS NUMBER	176
OLD PARTS SHAPE CODE	177
SET FLAG (0:UNUSED, 1:USED)	178
INSPECTION STATUS (0:CAM MASTER, 1:INSPECTED)	179
UPDATE DATA	180
%PARTS FACT (BINARY)	181
FRACTION DEFECTIVE	
TOTAL NUMBER OF PARTS	
NUMBER OF DEFECTIVE PARTS	

MASTER DATA

OLINE MASTER (Line MST)

LINE ID	191
LINE NAME	192
CAM LINE NAME	193

OLINE CONSTRUCTION MASTER (Linokousei MST)

LINE NAME	201
EQUIPMENT NAME	202
SEQUENTIAL NUMBER	203
CARRY-IN/CARRY-OUT (1:CARRY-IN, 2:CARRY-OUT, 0:NEITHER)	204

O EQUIPMENT MASTER (Setsubi_ MST)

EQUIPMENT ID	211
EQUIPMENT NAME	212
EQUIPMENT NAME	213

OBOARD MASTER

BOARD ID	221
BOARD NAME	222

OSURFACE SECTION MASTER

SURFACE NUMBER	231
SURFACE SECTION NUMBER	232

ODATA TYPE MASTER (Syubetu MST)

EQUIPMENT TYPE ID	241
DATA TYPE ID	242
DATA TYPE NAME	243
DATA PRESENT(1) ABSENT(0)	244

OFLAG MASTER

FLAG NUMBER	251
FLAG DESIGN	252

O EQUIPMENT TYPE MASTER (Setsubikisyu MST)

EQUIPMENT TYPE ID	261
EQUIPMENT TYPE NAME	262

OVERSION MASTER (Version MST)

VERSION ID	271
VERSION NAME	272

FIG.3

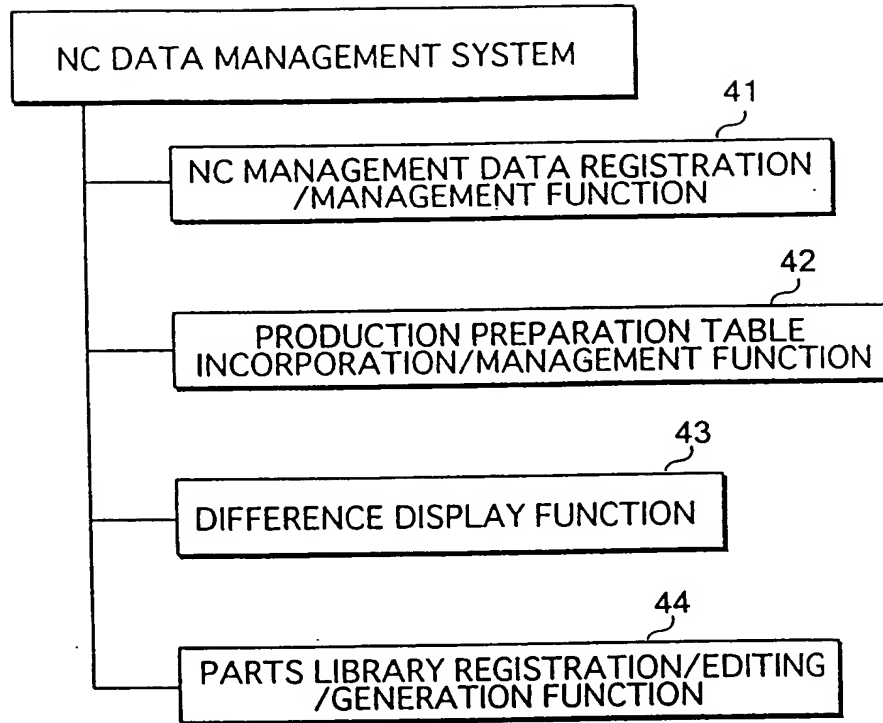


FIG.4

DATA TYPE: ▾

ALL
 NC PROGRAM
 ARRANGEMENT PROGRAM
 BOARD PROGRAM
 PARTS LIBRARY
 SUPPLY LIBRARY
 RAW BOARD
 PARTS TABLE

BOARD NAME: ▾

SPECIFY OR
SELECT ALL

LINE NAME: ▾

SPECIFY OR
SELECT ALL

EQUIPMENT NAME: ▾

SPECIFY OR
SELECT ALL

DISPLAY

ADD

EDIT

DELETE

REGISTER

UPDATE DATE	BOARD NAME	LINE NAME	EQUIP- MENT NAME	INSPec- TION STATUS	DATA TYPE	PROGRAM NAME	VER- SION	QUALITY FRAC- TION DEFEC- TIVE (ppm)	EFFEC- TIVE DATE	CHECK	SPEC CHANGE NO.
2000/ 5/30	CT201	LINE-1A	MV2V_1A	INSPec- TED	NC PRO	EG12345A00S01	1	100	2000/ 6/1	<input type="checkbox"/>	
2000/ 6/2	CT201	LINE-1A	MV2V_1A	INSPec- TED	NC PRO	EG12345A00S02	2	20	2000/ 6/12	<input checked="" type="checkbox"/>	100
2000/ 6/2	CT201	LINE-1A	MV2V_1A	INSPec- TED	AR- RANGE- MENT PRO	EG12345A00S01	1	13	2000/ 6/1	<input checked="" type="checkbox"/>	
2000/ 6/2	CT201	LINE-1A	MV2V_1A	INSPec- TED	PUB	EG12346A00S02	1	12	2000/ 6/12	<input checked="" type="checkbox"/>	
2000/ 6/2	CT201	LINE-1A	MV2V_1A	INSPec- TED	RAW BOARD	EG12348A00S01	1	—	2000/ 6/1	<input checked="" type="checkbox"/>	
2000/ 6/2	CT201	LINE-1A	—	INSPec- TED	PARTS TABLE	EG12349A00S01	1	—	2000/ 6/1	<input checked="" type="checkbox"/>	

(PROCESSING STATUS AND ERROR LOG ARE DISPLAYED)

FIG.5

OUTPUT LINE IS SELECTED
 ALL LINE1-B
 LINE2-A

NC DATA MANAGEMENT SYSTEM
(DISPLAYING PRODUCTION PREPARATION TABLE)

LINE NAME: LINE 1-A ▼

MAN-AGE-MENT NO.	EN-TER FLAG	BATCH DOWN-LOAD BUTTON	COM-MON PARTS LIBRARY SET-TING-BUTTON	NC PREPA-RATION-STATUS	PRO-DUC-TION START DATE/TIME	LOT NO.	BOARD NAME	LINE NAME	SUR-FACE SEC-TION	NUM-BER OF PROD-UCTS	PARTS TABLE	UP-DATE DATE	EQUIP-MENT NAME	PARTS
1	■	■	■	○	2000.6/6 9:00	00000001	CT201	LINE-1A	TABLE	23	○	2000.6/2	NA 21A	○○○○○
2	■	■	■	○	2000.6/6 10:00	00000002	CT202	LINE-1A	TABLE	34	○	2000.6/2	NA 21A	○○○○○-
3	■	■	■	○	2000.6/6 13:00	00000003	CT203	LINE-1A	TABLE	12	○	2000.6/2		
4	■	■	■	○	2000.6/6 15:00	00000004	CT204	LINE-1A	TABLE	11	○	2000.6/2		
5	□	□	□	△	2000.6/6 17:00	00000005	CT205	LINE-1A	TABLE	10	○	2000.6/2		
6	□	□	□	○	2000.6/6 19:00	00000006	CT206	LINE-1A	TABLE	3	×	2000.6/2		

(PROCESSING STATUS AND ERROR LOG ARE DISPLAYED)

SELECT MANAGEMENT NO. AND SELECT 3 TO OPEN LOWER SCREEN

FIG.6A

	MANAGEMENT NO.	EQUIPMENT NAME	DATA TYPE
COMPARISON OBJECT 1:	3 <input type="checkbox"/>	MPAV2 1A <input type="checkbox"/>	PARTS LIB <input type="checkbox"/>
COMPARISON OBJECT 2:	6 <input type="checkbox"/>	MPAV2 1A <input type="checkbox"/>	PARTS LIB <input type="checkbox"/>

FIG.6B

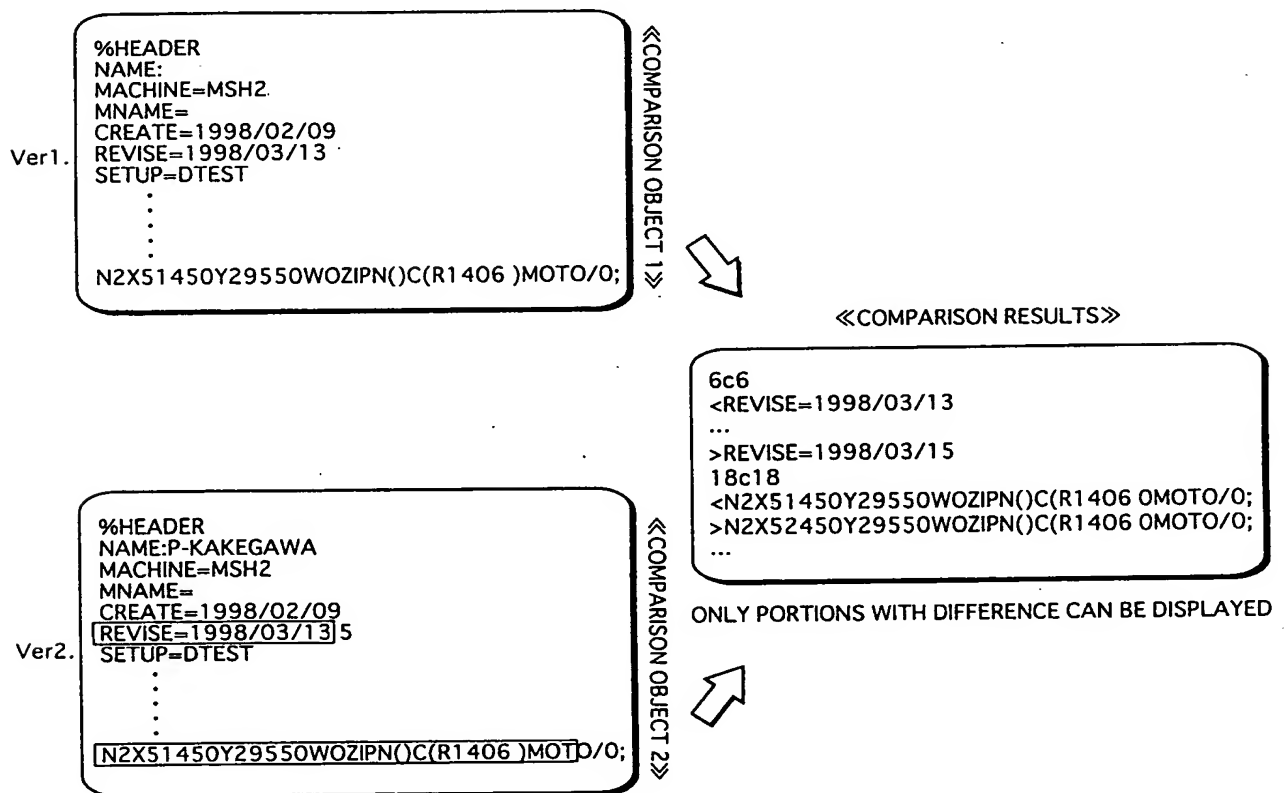


FIG.7

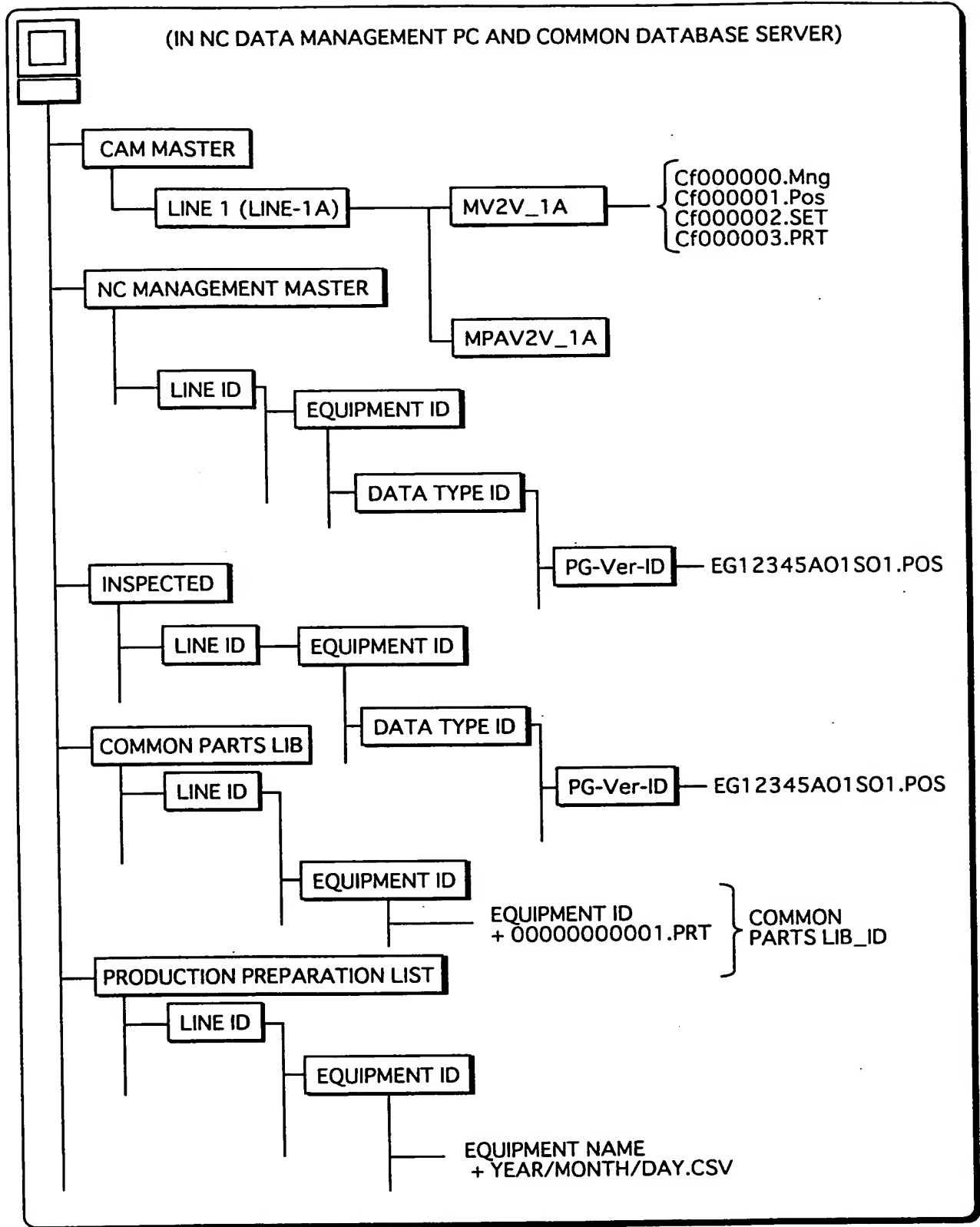


FIG.8

UPDATE DATE

EQUIPMENT NAME

ALL
MV2V-1A
MPA2V-1A

EQUIPMENT NAME: MV2A-1A ▼

DISPLAY
ADD
EDIT
DELETE
REGISTER

UPDATE DATE	EQUIPMENT NAME	EQUIPMENT TYPE	PARTS SHAPE CODE	PARTS SHAPE VERSION ID	INSPECTION STATUS (0:NC MANAGEMENT, 1:INSPECTED)	FRACTION DEFECTIVE (ppm)	PARTS NUMBER	OLD PARTS SHAPE CODE	SETTING FLAG (0:UNUSED, 1:USED)
2000/7/21	MV2V_1A	MV2V	M1608R	1	CAM	—			<input type="checkbox"/>
2000/7/24	MV2V_1A	MV2V	M1608R	2	INSPECTED	100	ERJ3GEYJ221V	M1608R	<input checked="" type="checkbox"/>
2000/7/21	MV2V_1A	MV2V	M1608R-1	1	INSPECTED	80			<input checked="" type="checkbox"/>
2000/7/21	MV2V_1A	MV2V	2125CT06-E	1	CAM	—			<input type="checkbox"/>
2000/7/24	MV2V_1A	MV2V	2125CT06-E	1	INSPECTED	50			<input checked="" type="checkbox"/>
2000/7/21	MV2V_1A	MV2V	3212C	1	CAM	—			<input type="checkbox"/>
2000/7/24	MV2V_1A	MV2V	3212C	1	INSPECTED	80			<input checked="" type="checkbox"/>
2000/7/21	MV2V_1A	MV2V	M3216CT11-E	1	CAM	—			<input type="checkbox"/>
2000/7/24	MV2V_1A	MV2V	M3216CT11-E	1	INSPECTED	20			<input checked="" type="checkbox"/>
2000/7/21	MV2V_1A	MV2V	M3325R	1	CAM	—			<input type="checkbox"/>
2000/7/21	MV2V_1A	MV2V	M3325R	1	INSPECTED	20			<input checked="" type="checkbox"/>

(PROCESSING STATUS AND ERROR LOG ARE DISPLAYED)

FIG.9

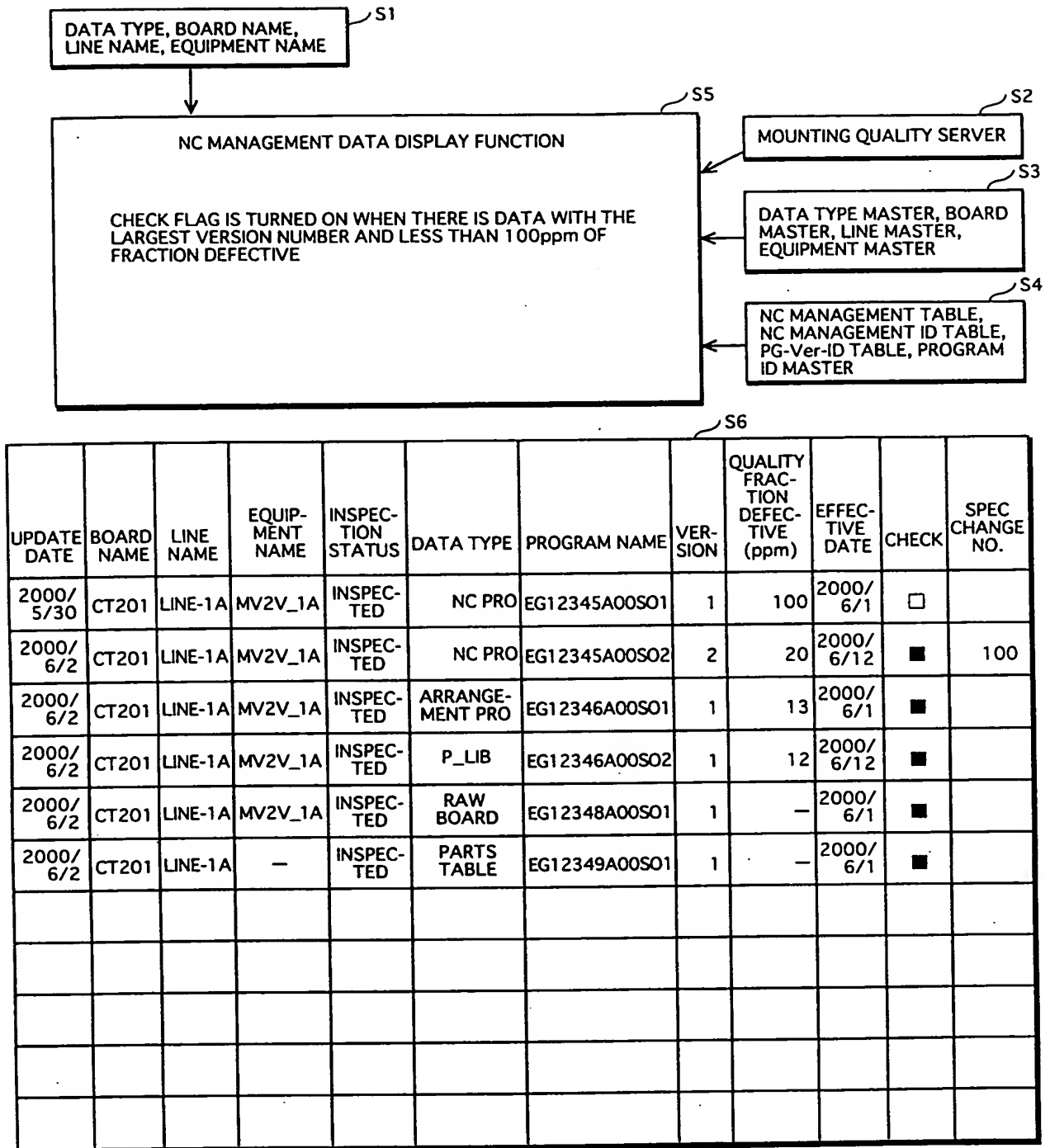


FIG. 10

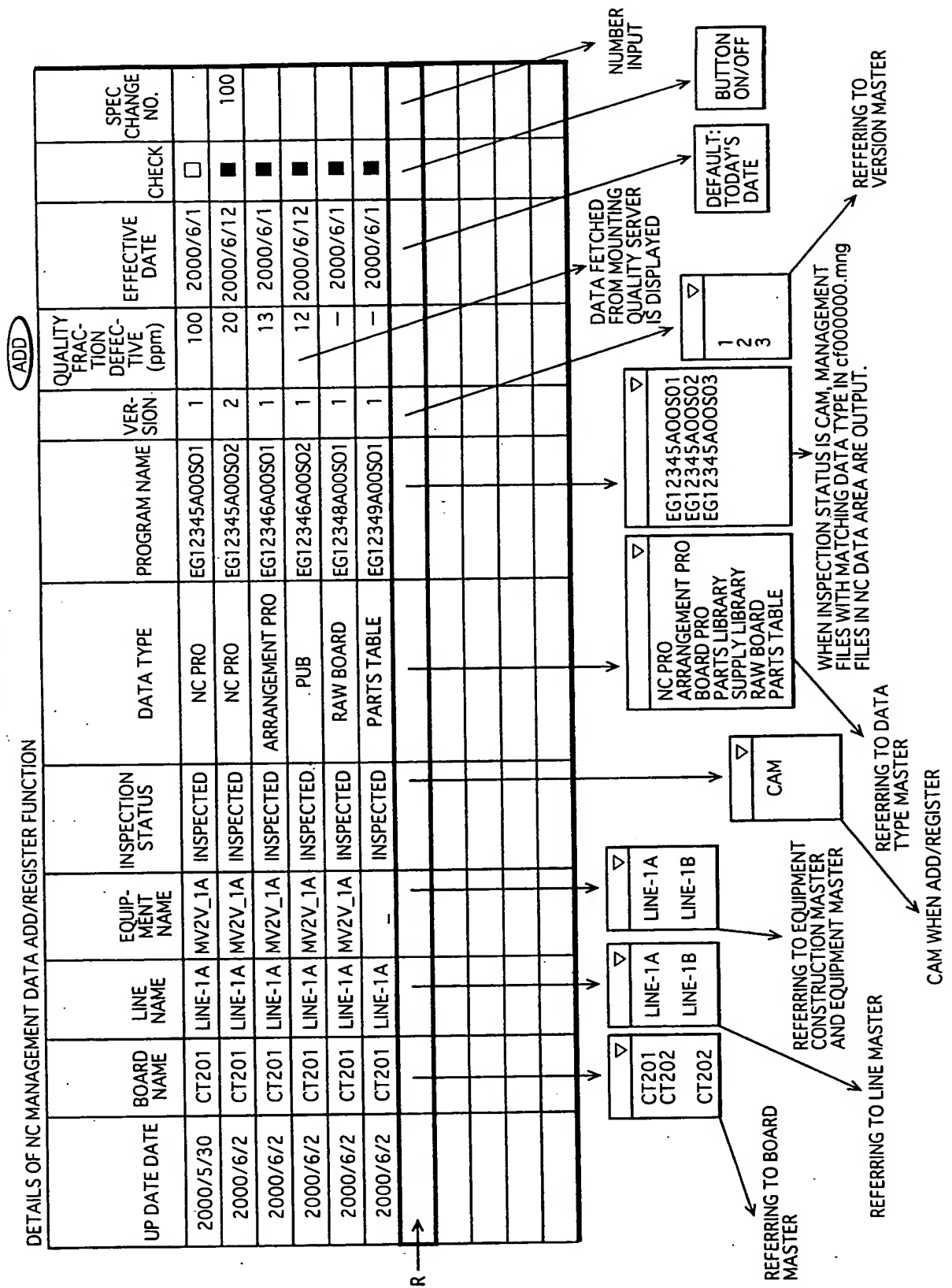


FIG. 11

DETAILS OF NC MANAGEMENT DATA EDIT FUNCTION

[illegible]

EDIT

```

graph TD
    A[CAM NC MANAGEMENT INSPECTED] --> B[NC PRO ARRANGEMENT PRO BOARD PRO PARTS LIBRARY SUPPLY LIBRARY RAW BOARD PARTS TABLE]
    B --> C[EG12345A00S01  
EG12345A00S02  
EG12345A00S03]
    C --> D[DEFAULT: TODAY'S DATE]
    D --> E[BUTTON ON/OFF]
    F[INPUT] --> E
    E --> G[COMMENT INPUT (NO MORE THAN 10 FULL-LENGTH CHARACTERS)]
  
```

COMMENT INPUT (NO MORE THAN 10 FULL-LENGTH CHARACTERS)

FIG.12

DETAILS OF NC MANAGEMENT DATA DELETE FUNCTION

DETAILS OF NC MANAGEMENT DATA DELETE FUNCTION											
UP DATE DATE	BOARD NAME	LINE NAME	EQUIP- MENT NAME	INSPECTION STATUS	DATA TYPE	PROGRAM NAME	VER- SION	QUALITY FRAC- TION DEFEC- TIVE (ppm)	EFFECTIVE DATE	CHECK	SPEC CHANGE NO.
2000/5/30	CT201	LINE-1A	MV2V_1A	INSPECTED	NC PRO	EG12345A00SO1	1	100	2000/6/1	<input type="checkbox"/>	
2000/6/2	CT201	LINE-1A	MV2V_1A	INSPECTED	NC PRO	EG12345A00SO2	2	20	2000/6/12	<input checked="" type="checkbox"/>	100
2000/6/2	CT201	LINE-1A	MV2V_1A	INSPECTED	ARRANGEMENT PRO	EG12346A00SO1	1	13	2000/6/1	<input checked="" type="checkbox"/>	
2000/6/2	CT201	LINE-1A	MV2V_1A	INSPECTED	P_LIB	EG12346A00SO2	1	12	2000/6/12	<input checked="" type="checkbox"/>	
2000/6/2	CT201	LINE-1A	MV2V_1A	INSPECTED	RAW BOARD	EG12348A00SO1	1	—	2000/6/1	<input checked="" type="checkbox"/>	
2000/6/2	CT201	LINE-1A	—	INSPECTED	PARTS TABLE	EG12349A00SO1	1	—	2000/6/1	<input checked="" type="checkbox"/>	

DELETE BUTTON→CHECK (YES AGAIN OR NO)→DELETE

FIG.13

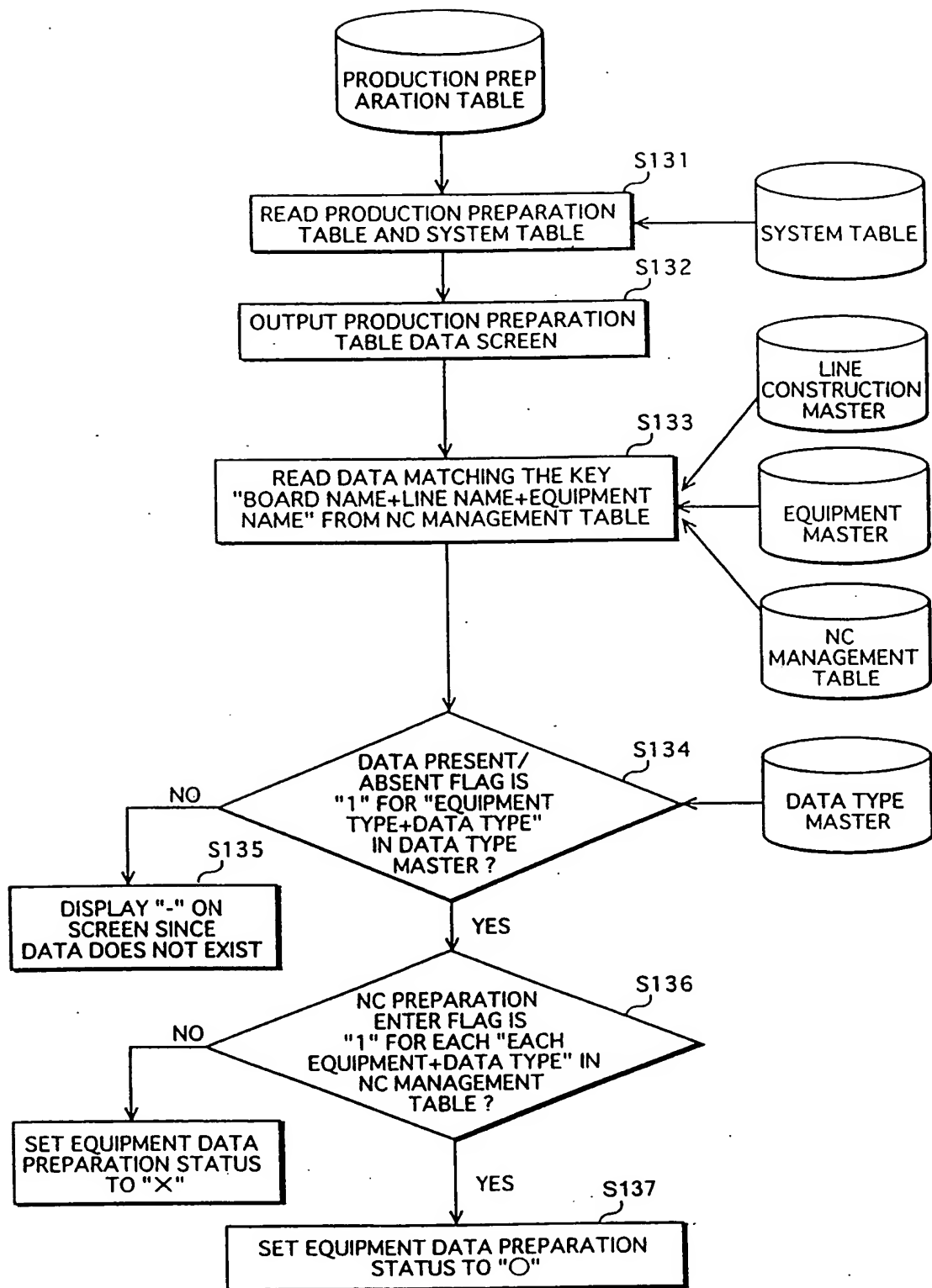


FIG.1 4

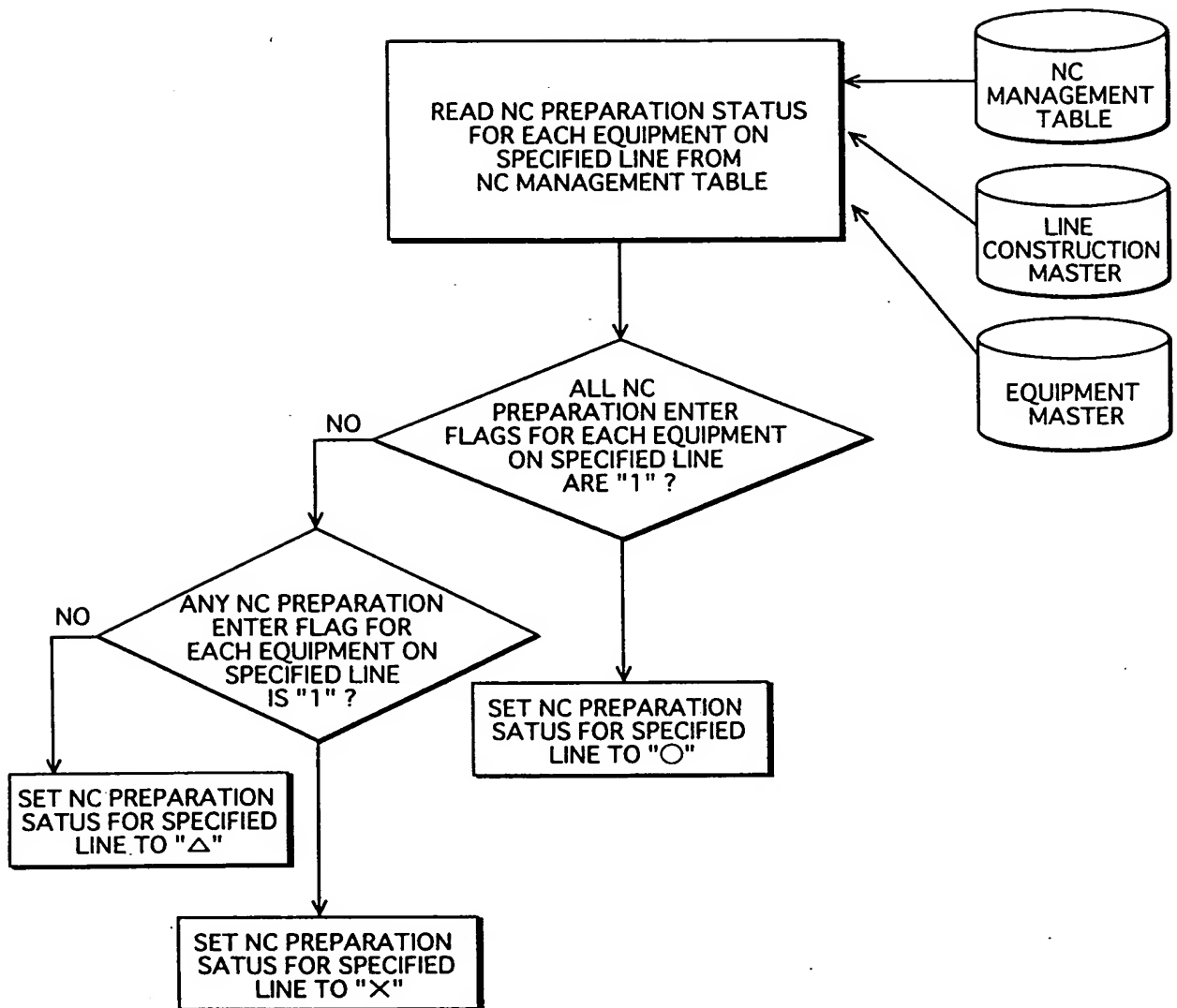


FIG.15

DETAILS OF PARTS LIBRARY GENERATE FUNCTION

TABLE A

MAN-AGE-MENT NO.	BATCH DOWN-LOAD BUTTON	COMMON PARTS LIBRARY SETTING BUTTON	NC PREP-ARATION STATUS	PRODUCTION START DATE	BOARD NAME	LINE NAME	SURFACE SECTION VERSION	NUM-BER OF PRO-DUCTS	PARTS TABLE	UPDATE DATE	EQUIPMENT NAME	NC	AR-RANGE-MENT	BOARD	PARTS	SUPPLY
1	■	■	○	2000.6.6 10:00	CT201	LINE-1A	TABLE	23	○	2000/6/2	MV2V_1A	○	○	○	○	○
2	■	■	○	2000.6.6 10:00	CT202	LINE-1A	TABLE	34	○	2000/6/2	MPAV2_1A	○	○	○	○	—
3	■	■	○	2000.6.6 13:00	CT203	LINE-1A	TABLE	12	○	2000/6/2						
4	■	■	○	2000.6.6 15:00	CT204	LINE-1A	TABLE	11	○	2000/6/2						
5	□	□	△	2000.6.6 16:00	CT205	LINE-1A	TABLE	10	○	2000/6/2						
6	□	□	X	2000.6.6 18:00	CT206	LINE-1A	TABLE	3	X	2000/6/2						

CURRENT ARRANGEMENT PROGRAM IS EXTRACTED FROM BOARD NO., LINE ID, EQUIPMENT ID

TABLE B

	MV2V_1A ARRANGEMENT PRO NAME	MPAV2_1A ARRANGEMENT PRO NAME
CT201 LINE-1A	EG12346A00S01	EG12380A00S01
CT202 LINE-1A	EG12347A00S01	EG12381A00S01
CT203 LINE-1A	EG12348A00S01	EG12382A00S01
CT204 LINE-1A	EG12349A00S01	EG12383A00S01

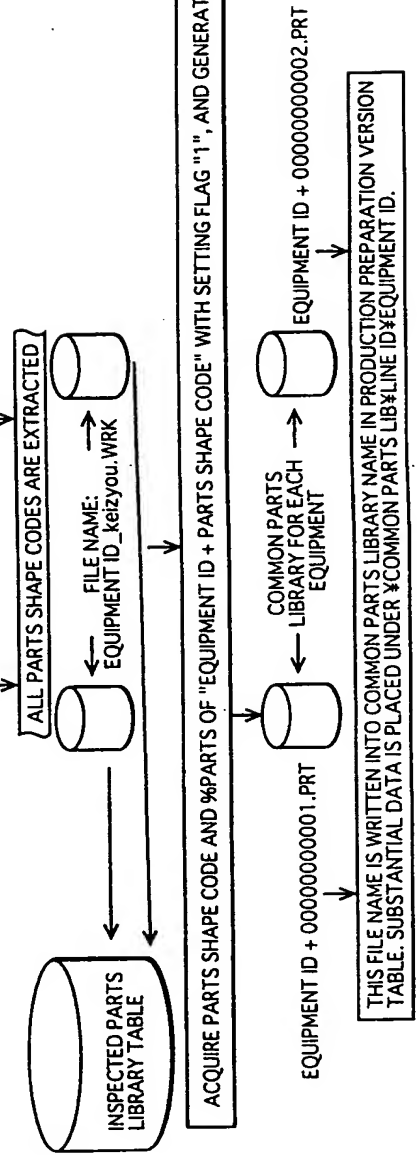


FIG.16

FLOWCHART OF NC DATA MANAGEMENT SYSTEM

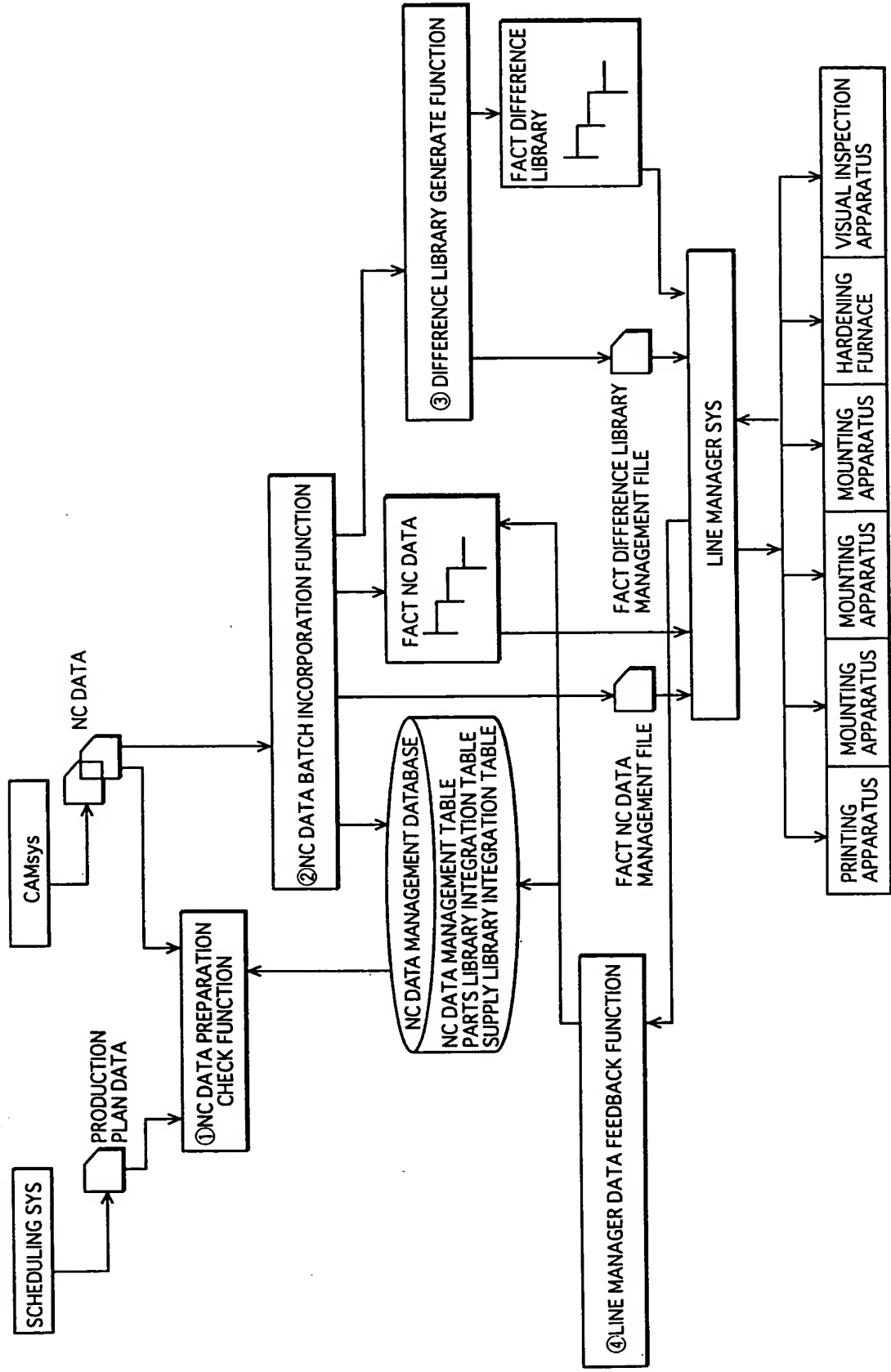


FIG.17

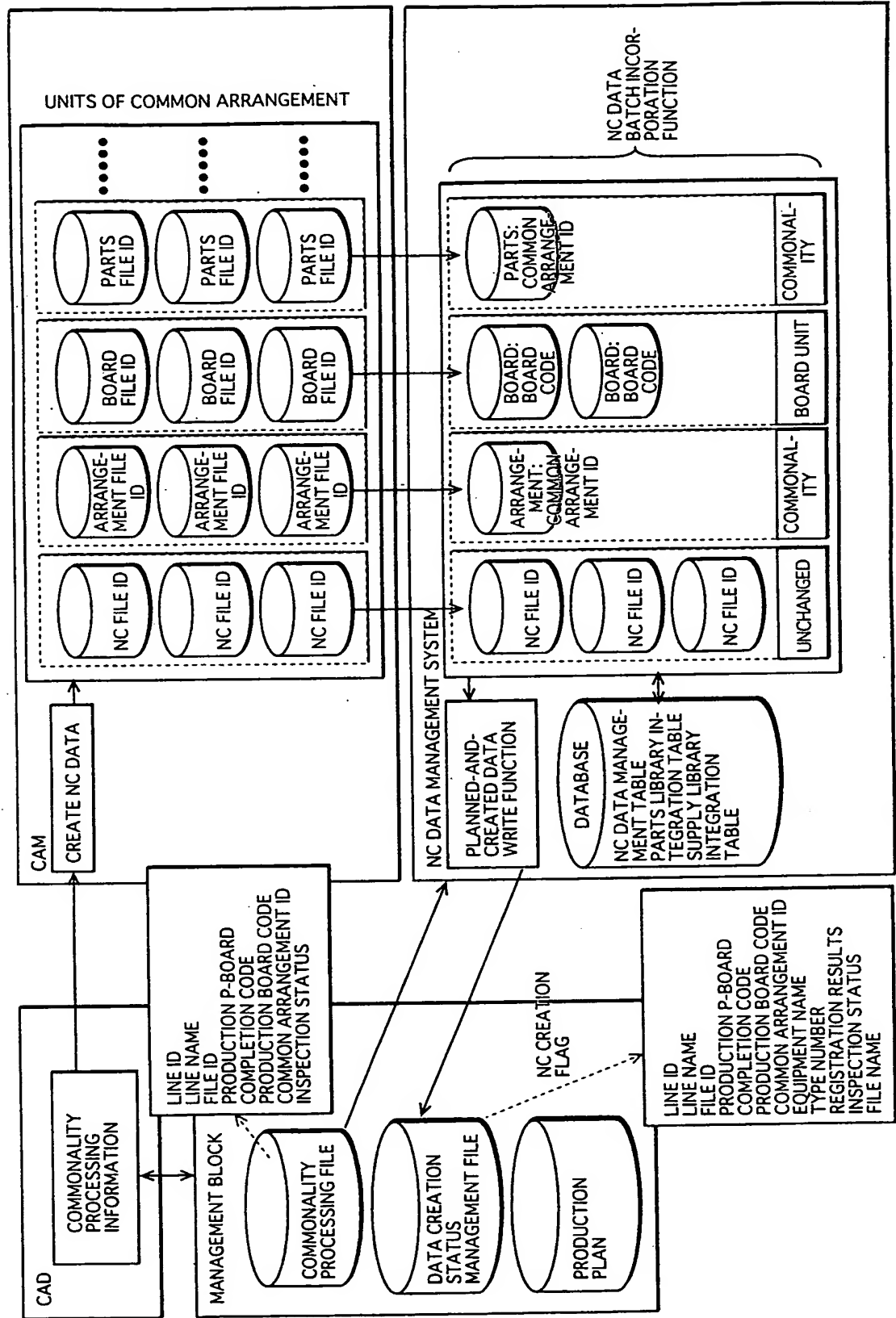


FIG.18

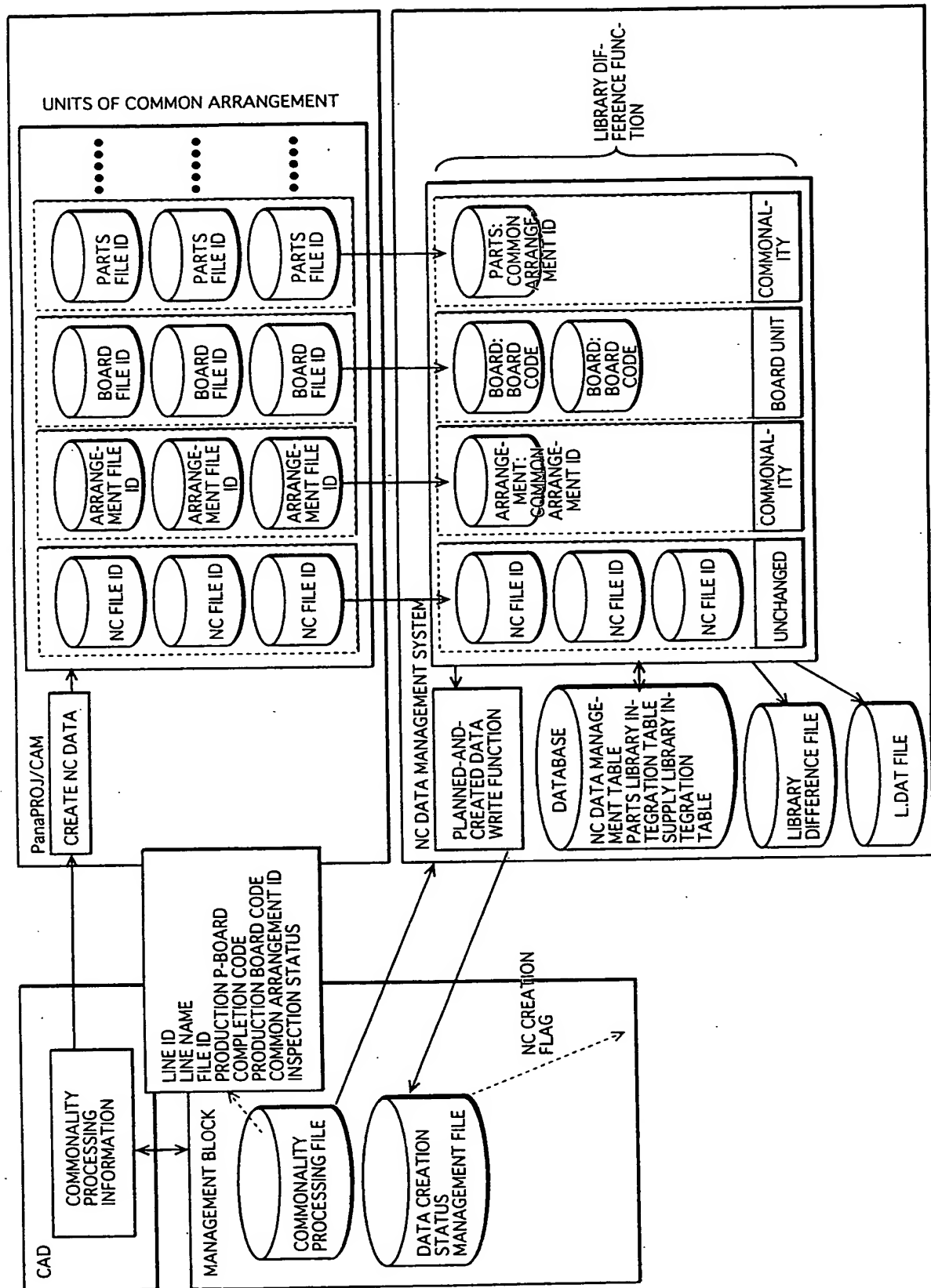


FIG.19

④LINE MANAGER DATA FEEDBACK FUNCTION

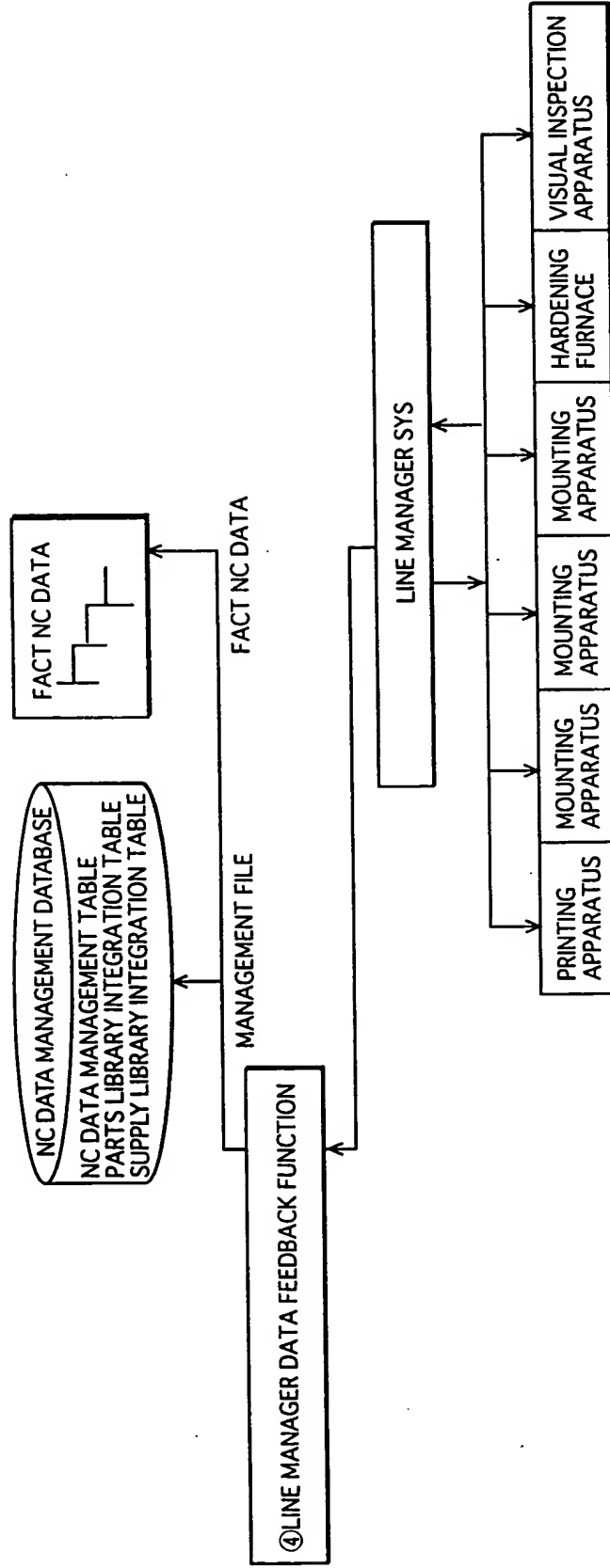


FIG.20

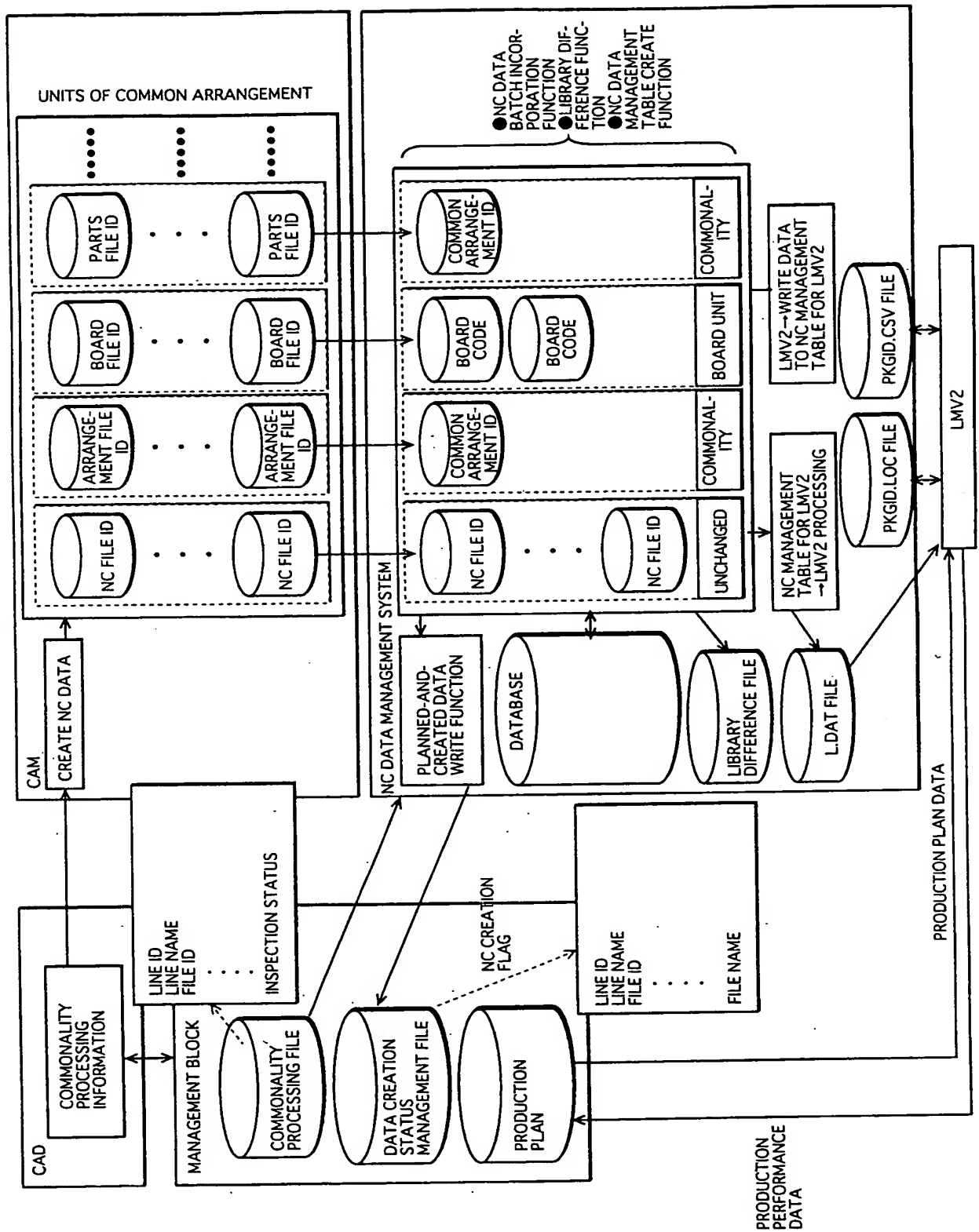
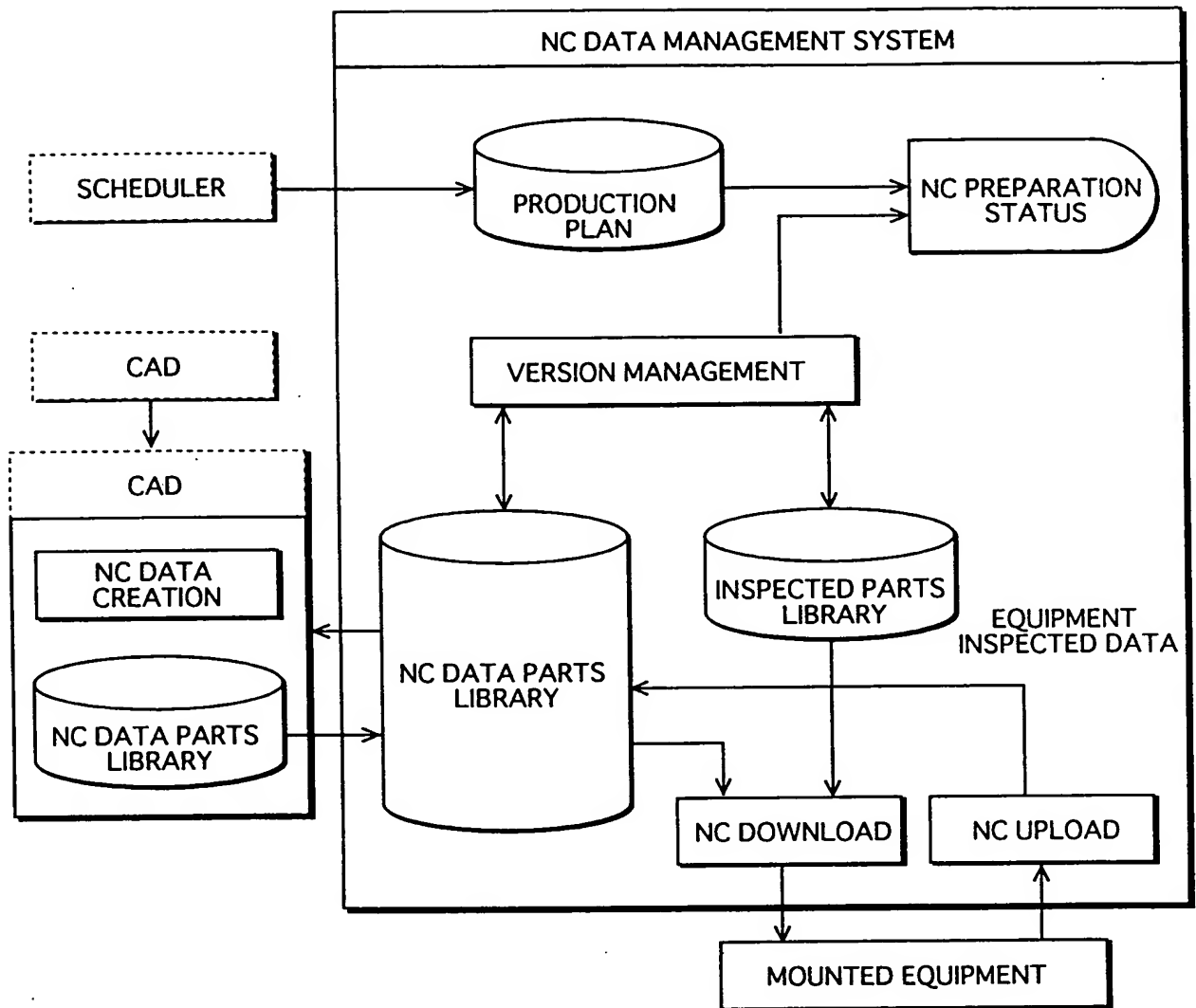


FIG.21



CONSTRUCTION OF NC DATA MANAGEMENT SYSTEM